**Photosynthesis and Respiration Vocabulary**

**Photosynthesis**

Photosynthesis – the process of converting light energy into chemical energy.

Autotrophs – organisms that use light or inorganic substances to make their own energy.

ATP – adenosine triphosphate; the chemical that is used as energy in cells.

NADPH – a molecule that is used to transport electrons for use in other places in the cell.

Light Reactions – the parts of photosynthesis that depend on the presence of light.

Chlorophyll – the pigment in plants that is responsible for trapping sunlight. It absorbs red and blue light and reflects green light.

Thylakoids – the place where light-dependent reactions take place during photosynthesis.

Electron Transport Chain – a process involving membrane proteins where electrons are used to make ATP and NADPH.

Calvin Cycle – the “dark reaction” of photosynthesis; in this cycle, carbon dioxide is changed into sugar and other organic molecules.

**Cellular Respiration**

Cellular Respiration – the process of breaking down food to release the chemical energy inside.

Metabolism – the combination of all the chemical processes in your body.

Heterotrophs – organisms that get their energy from food instead of sunlight or inorganic substances.

Aerobic – “with oxygen”

Anaerobic – “without oxygen”

Glucose – sugar

Mitochondria – the place in a cell where respiration takes place.

Glycolysis – the first stage of respiration where glucose is broken down. This occurs in a cell’s cytoplasm.

Kreb’s Cycle – the second stage of respiration where NADH and NADPH are made. This occurs in the mitochondria. Oxygen must be present for this to happen.

Electron Transport Chain – the final stage of respiration where 32 ATP are made. Most of the energy from respiration comes from this stage. This cannot happen without oxygen present.

Fermentation – the anaerobic process that occurs when oxygen is not present. This allows a cell to produce a little ATP and keep working until oxygen is present again.

**Photosynthesis and Respiration Equations**

Photosynthesis

Respiration